PREDICTION OF FUTURE CASH FLOWS USING DISAGGREGATED ACCRUALS AND CASH FLOWS OF SMALL-SIZED FIRMS LISTED AT THE PAKISTAN STOCK EXCHANGE (PSE)

Iftikhar-ul-Amin¹, Giuseppe (Joe) Labianca² and Nadia Iftikhar³

Abstract

The prediction of future cash flows is vital for the investment decisions of individuals as well as institutions. This research tests the prediction of future cash flows by various variables for instance current earnings, accrued accounts, operating cash flow and variables’ higher predictive ability. The findings suggest that current earnings do not reveal better prediction power as compared to the prediction ability of current operating cash flow for small sized firms in Pakistan. The results support the result of model specified by Barth et.al (2001), that improved predictability is resulted if cash flows and aggregate accrued accounts are used as an independent variable rather than current earnings. Additionally, disaggregation of accrued accounts provides superior explanatory-power than using aggregate accrued accounts. Separate current earnings or current operating cash flow variables are not sufficient to predict the future cash flow; more parts are to be added in order to enhance the ability to predict future cash flows in the context of small firms in Pakistan.

Keywords: Prediction, Cash Flows, Pakistan Stock Exchange

JEL Classification: G29

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Introduction

The purpose of the financial reporting system and more specifically the accounting system has to be the generation of useful information helpful in making decisions by the investors. There are many factors that would become the basis of their investment decision; performance is considered to be the vital one amongst them. The information that helps an investor to judge the performance of a corporate entity is contained in the financial statements of the corporation. The financial statements being the end product of the accounting cycle are thus an important means through which the investor can judge the different aspects of a company. The same has been emphasized by the Financial Accounting Standard Board (FASB) which suggests that financial reporting should be helpful in assessing future cash flows (Conceptual Framework, FASB 2010) which are necessary for the determination of the health of the company. Furthermore, accrual accounting is one of the parts of the financial reporting system that can be helpful in forecasting the future cash flows of an enterprise. Accrual accounting is based on the notion that the provision or receipt of goods or services and not cash payment or receipt is the basis for recognition of revenues and expenses. Revenues and expenses in turn determine the profits generated by a company. Several studies in the past have used the predictive ability of earnings, cash flows, accrued accounts, sales revenue etc. for the assessment of future cash flows, or in other words the future performance of the company.

There have been mixed results with some terming earnings as better predicting the future cash flows, for example Greenberg and Ramesh (1986); Dechow, Kothari and Watts (1998) where others declaring cash flows as superior predictor of future cash flows, for example Finger (1994), Bowen, Burgstahler and Daley (1986), Percy and Stokes (1992). Moreover, industry effects and size effects of the firms have also been analyzed in the framework of predictability of future cash flows with most manufacturing industries showing high and the services industries having low level of accrued accounts and
thus differences in the predictive power of different attributes (Das, 2012). Size has also been a major influence with cash flow adding more explanatory power for larger firms and smaller firms having more transitory earnings components (Hodgson & Stevenson-Clarke, 2000). However, the value relevance of earnings, cash flows and accrued accounts has largely remained unexplored in the context of Pakistan. Therefore, this paper is an attempt to assess this phenomenon with emphasis on the small-sized firms listed on the Karachi Stock Exchange.

This research contributes towards the understanding of the predictive ability of current earnings and current cash flows for future cash flows of small-size firms listed on Karachi Stock Exchange (KSE) Pakistan. The existing literature does not share empirical investigations on this topic in Pakistan and hence the results are relevant to investors in Pakistan who have investment preferences in small-size businesses. Moreover, cash flows' relevance and importance in predicting future cash flows has been tested and hence the importance of cash flow information from a stand point of reporting and disclosure as required under accounting regulations by standards setting bodies is discussed.

This paper follows the parameters paved by Barth, Cram and Nelson (2001). Enhanced prediction of future cash flows is explained by the models used. Firstly, this study helps to find out the differences in explanatory powers of current earnings and operating cash flows, as to how well both of these measures are helpful in forecasting the future outlook of a company through future cash flows. Secondly, it uses cash flow and accrued accounts as a source of predicting future cash flows, then further dividing accrued accounts into its parts, namely accounts payable, accounts receivable and inventory and
also measuring their predictive capability. Finally, adding worked out components to the current earnings model and evaluating its prediction power.

**Literature Review**

The gradual shift in financial reporting framework from funds flow statements to cash flow statements (IAS 7) has important implications as a funds flow statement basically segregates earnings into working capital and long-term accrued accounts like depreciation and amortization whereas a cash flow statement segregates earnings into operating cash flow and aggregated accruals accounts for example changes in inventory stock, changes in receivables and changes in payables, and changes in long-term accrued accounts. Significance of sharing information to segregating earnings into parts such as cash flows, short-term accruals and long-term accrual is discussed, precisely to know if similar conditions are beneficial for the prediction of future cash flows and the ambiguity in valuing firms. The discussion regarding the value relevance of cash flows and short-term and long-term accrued accounts matched to earnings has been taken up by different researchers in either of two approaches. The first one links cash flow and additional measures to stock prices via regressions with market value or stock returns as the dependent variables [For example Dechow(1994); Francis, Schipper and Vincent(2003); Liu, Nissim and Thomas (2007); Barton et al. (2010); Akbar, Shah & Stark (2011)]. The variable which supports a specific market value statistic is viewed to be the exceptional one. The second approach considers the relative usefulness of earnings and, in particular, cash flows in predicting future cash flows. For example, Barth et al (2001) and Al-Attar and Hussain (2004) have authenticated the advantage of operating cash flow over earnings in predicting future operating cash flows. Akbar, Shah & Stark (2011) report the value relevance of cash flows, current accruals, and non-current accruals in the UK and have also studied it on the basis of three size bands small, medium and large firms based on their market capitalization. The earnings measure
employed in this study is not sufficient for valuation relative to the cash flow and total accruals or funds flow and non-current accruals. The findings also suggest that the results of the sub-group analyses are not totally consistent with those for the full sample.

Forecasting cash flows is a significant step necessary in making a number of economic decisions. It is because cash flows contribute a major part to the decision-making of many security analysts, managers and creditors (Staubus, 2004). Moreover, Frigo and Graziano (2003) state that for a firm issuing shares, prediction of future cash flows should be the very first responsibility in measuring the firm’s ability to pay the dividends. As a result, analysts are reluctant to value the firm by just looking at the mere profit figure and prefer inclusion of the cash flow data for the analytical purpose (Boyd and Cortese-Danile, 2000).

Furthermore, Cheng (2003) argues that for evaluation of a company, cash flows are considered natural substitute as performance indicator because cash flows are already calculated and can be inculcated in cash flow statements at any moment. Usually prediction of future cash flows is done using accounting information as input data for the various models (Godfrey et al, 2003). Bartov, Goldberg and Kim (2001) used a cross-country sample and the proportional data of earnings and cash flow for valuation of equity. According to their findings, value relevance depended on the difference of reporting regimes for each territory. Therefore, data used in different countries would result in different outcome.

Greenberg, Johnson and Ramesh (1986) provide the results of future cash flow being favorably predicted by current earnings rather than by current cash flow empirically testing FASB’s contention. Later on same findings were supported by Lorek and Willinger (1996).
and Dechow et al. (1999). Brochet, Nam, and Ronen (2009) find that positive accrued accounts add to the predictive ability of current cash flow in predicting future cash flow. Lev, Li and Sougiannis (2010) in their research have concentrated on accounting approximation set in accrued accounts and assess the effectiveness in predicting the cash flow and earnings.

Orpurt and Zang (2009) have shared through their research that market agents favor straight-disclosure method for the forecasting of future operating performance. This study also used the earnings and current cash flows and segregating components as predictors of future cash flows.

**Research Questions**

This study replicates the work of Barth et al. (2001) by applying the model specified by them to the Pakistan market, with emphasis on the small sized firms. The model is based on a series of equations with each one taking into account a variable or set of variables and testing the predictive ability of those for future cash flows. This set of equations would provide with the answers to the following research questions.

- Is future cash flows prediction improved by using current cash flow rather than by current earnings?

- Does disaggregating earnings into its parts provide additional information than using aggregate form of earnings in predicting future cash flow?

- Does addition of the short and long term accrued accounts data to the current earning model provide informational gains in the prediction of future cash flows?
Variable Definitions & Calculation

In order to find possible answers for the questions raised in the study, the following variables have been used after incorporating into the models.

Accrued accounts

These accounts appear on a balance sheet and exemplify liabilities and assets that are non-cash-based. Accrued accounts are practiced in accrual-based accounting. The examples of such accounts include accounts payable, accounts receivable, goodwill, future tax liability and future interest expense etc.

Aggregated accrued accounts

Short term accrued accounts

Short-term accrued account refer to amount collectable or payable for a firm within one year. Such accrued accounts may be either from assets group or liabilities. Accrued accounts result from arranging supplies for the firm or from registering regular sales on credit. Account payables and account receivables are some of the examples for accrued account.

Accrued liability for example represents payment owing to a company and the firm is liable to pay as they come due. These accounts, usually, result from goods and/or services acquired on credit-terms from suppliers. For example, account payables represent a business’s unpaid, regular expenses that are typically short-term debts. Account payables are paid off in a definite period of time and are current liabilities because the payment is usually due within one year. Such accounts are reported in the current section of a balance sheet.
Accounts receivables amount owed by customers to the firm in exchange for goods supplied or services rendered. Receivables are typically due within a short time period such as from a few days to a year.

**Long-term accrued accounts**

Some accrued accounts exemplify assets or liabilities due for payment in more than one year. Long-term accrued accounts need accounting adjustment at the end of each period. An example of long-term accrued expense would be employees’ terminal benefits that are accrued during employment period but paid at their retirement over a longer period of time.

**Other accrued accounts**

**Aggregate earnings**

Accrued earning is an amount of income earned by company by providing a service or selling a product, but has yet to be received. Aggregate accounting earnings are also called long-term accruals. In order to quantify the above mentioned variables, they have been calculated in the following manner;

**Table 1:**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Variable</th>
<th>Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF</td>
<td>Operating cash flow</td>
<td>Operating profit + depreciation - Taxes</td>
</tr>
<tr>
<td>EARN</td>
<td>Earnings</td>
<td>Earnings Before Taxes - Taxes =Earnings After Tax</td>
</tr>
<tr>
<td>ΔAR</td>
<td>Change in Accounts Receivable</td>
<td>Difference of balance of Accounts Receivable at the ends of two years</td>
</tr>
<tr>
<td>ΔAP</td>
<td>Change in accounts Payables</td>
<td>Difference of balance of Accounts Payable at the end of two years</td>
</tr>
<tr>
<td>ΔINV</td>
<td>Change in Inventory</td>
<td>Difference of balance of Inventory at the end of two years</td>
</tr>
<tr>
<td>DEPR</td>
<td>Depreciation</td>
<td>Depreciation + amortization</td>
</tr>
<tr>
<td>ACCR</td>
<td>Aggregate accrued accounts</td>
<td>Earnings - Cash Flow</td>
</tr>
<tr>
<td>OTHER</td>
<td>Other accrued accounts</td>
<td>EARN - CF - ΔAR - ΔINV + ΔAP + DEPR</td>
</tr>
</tbody>
</table>

Each Variable is deflated by Average Total assets for the regression analysis.

**Statistical Models**

In order to answer the aforementioned questions, the following set of equations is employed. Firstly, to analyze and compare the capability of current cash flow, based on cash basis of accounting
and earnings, based on accrual basis of accounting in prediction of future cash flows, model 1 and 2 are represented by

Model 1: \( CF_{i,t+1} = \beta_0 + \beta EARN_{i,t} + \mu_{i,t} \)

Model 2: \( CF_{i,t+1} = \beta_0 + \beta CF_{i,t} + \mu_{i,t} \)

The comparison of the results of the above mentioned models would lead to answer to the first research question wherein it could be determined whether current cash flows or current earnings are more helpful in forecasting of future cash flows. The prediction of future cash flows being an important step regarding information for decision making.

Secondly, to examine if there are informational advantages in giving details regarding future cash flows, when the disaggregation of accrued accounts are made by dividing accrued accounts into the respective components of change in accounts receivable, payables, inventory as well as depreciation and other accruals, following equations are used:

Model 3: \( CF_{i,t+1} = \beta_0 + \beta CF_{i,t} + \beta ACCR_{i,t} + \mu_{i,t} \)

Model 4: \( CF_{i,t+1} = \beta_0 + \beta CF_{i,t} + \beta \Delta AR_{i,t} + \beta \Delta INV_{i,t} + \beta \Delta AP_{i,t} + \beta DEPR_{i,t} + \beta \text{OTHER}_{i,t} + \mu_{i,t} \)

Model 3 explains the decomposition of earnings into cash flows and accrued accounts, whereas equation 4 consists of the parts of accrued accounts after further disaggregation is made. The comparison of the results of these two models would give answer to the second research question.

The third set of equations analyze the explanatory power of earnings when both short-term and long-term accrued accounts are summed to it either separately or combined and whether results provide any additional information to the already computed predictive ability of earnings. The set of equations is as under:

Model 5: \( CF_{i,t+1} = \beta_0 + \beta EARN_{i,t} + \beta \Delta AR_{i,t} + \beta \Delta INV_{i,t} + \beta \Delta AP_{i,t} + \mu_{i,t} \)
Model 6: $CF_{i,t+1} = \beta_0 + \beta EARN_{i,t} + \beta DEPR_{i,t} + \mu_{i,t}$

Model 7: $CF_{i,t+1} = \beta_0 + \beta EARN_{i,t} + \beta \Delta AR_{i,t} + \beta \Delta INV_{i,t} + \beta \Delta AP_{i,t} + \beta DEPR_{i,t} + \mu_{i,t}$

Model 5 consists of the short term accrued accounts added to the earnings, long term major accrual i.e. depreciation is added to earnings in model 6, whereas model No.7 comprising of short-term and long term accrued accounts. The results of the above mentioned three models would answer the third research question regarding long term and short term accruals and their role in predicting future cash flows.

The above mentioned models are estimated by deflating each equation by average total assets to tackle any problems caused by heteroscedasticity. The predictive ability of each model is determined by means of matching the explanatory power of the models exercising F-test in the results. The purpose of this was to get the view that Model 1 is nested within any of Models 5, 6 or 7 and Models 2 and 3 are each nested within Model 4.

Data Collection and Sampling Method

Data used in this research is acquired for the years 1996 to 2011 for 572 listed companies from the website of Karachi Stock Exchange (KSE)\(^4\), Pakistan as of December, 2012. Firms having positive closing book value are reflected and then the subsequent sample is further refined by excluding all financial companies for standard reasons. The remaining companies are then tested for size. For the purpose of this research, size has been defined as per the criterion developed by the Securities and Exchange Commission of Pakistan.\(^5\) This results in 191 firm year observations for which the data of the required variables

4-www.kse.com.pk
5- Under the approved regulations of SECP, an SME is defined as a business having post-listing paid-up capital of Rs25 million.
have been selected from the Annual Reports of these companies for the years 1996-2011.

Findings

Table 2
Correlations between the variables

<table>
<thead>
<tr>
<th></th>
<th>CF_{t+1}</th>
<th>ΔINV</th>
<th>ΔAP</th>
<th>ΔAR</th>
<th>DEPR</th>
<th>EARN</th>
<th>CF_{t}</th>
<th>ACC</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF_{t}</td>
<td>1.000</td>
<td>0.678</td>
<td>0.564</td>
<td>0.605</td>
<td>0.602</td>
<td>0.523</td>
<td>0.651</td>
<td>-0.642</td>
</tr>
<tr>
<td>ΔINV</td>
<td>1.000</td>
<td>0.847</td>
<td>0.970</td>
<td>0.502</td>
<td>0.322</td>
<td>0.491</td>
<td>0.511</td>
<td>-0.511</td>
</tr>
<tr>
<td>ΔAP</td>
<td>1.000</td>
<td>0.916</td>
<td>0.204</td>
<td>0.234</td>
<td>0.244</td>
<td>0.225</td>
<td>-0.225</td>
<td>0.970</td>
</tr>
<tr>
<td>ΔAR</td>
<td>1.000</td>
<td>0.312</td>
<td>0.260</td>
<td>0.331</td>
<td>0.331</td>
<td>0.311</td>
<td>-0.328</td>
<td>0.949</td>
</tr>
<tr>
<td>DEPR</td>
<td>1.000</td>
<td>0.618</td>
<td>0.949</td>
<td>-0.995</td>
<td>-0.225</td>
<td>0.974</td>
<td>-0.974</td>
<td>0.821</td>
</tr>
<tr>
<td>EARN</td>
<td>1.000</td>
<td>0.682</td>
<td>0.974</td>
<td>-0.642</td>
<td>-0.511</td>
<td>0.974</td>
<td>-0.974</td>
<td>0.821</td>
</tr>
<tr>
<td>CF_{t}</td>
<td>1.000</td>
<td>0.847</td>
<td>0.970</td>
<td>0.502</td>
<td>0.322</td>
<td>0.491</td>
<td>0.511</td>
<td>-0.511</td>
</tr>
</tbody>
</table>

The correlations in the variables are drawn in Table 2 and coherent with the earlier research of Dechow et al. (1994); earning is positively correlated with accrued accounts and cash flow, the result indicates that the relationship is significant.

Table 3
Results of estimating Models 1 to 7 (pooled sample for the years 1996–2011).

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
<th>Model 6</th>
<th>Model 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>β₀</td>
<td>1.4429</td>
<td>0.880812</td>
<td>0.872981</td>
<td>1.46307</td>
<td>0.806617</td>
<td>0.704357</td>
<td>0.821322</td>
</tr>
<tr>
<td>(0.08021)*</td>
<td>(0.23226)</td>
<td>(0.23526)</td>
<td>(0.17834)</td>
<td>(0.23215)</td>
<td>(0.18276)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>β₁(cash)</td>
<td>-</td>
<td>0.174248</td>
<td>0.174248</td>
<td>-1.60246</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(0.0000)**</td>
<td>(0.04409)**</td>
<td>(0.0000)**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>β₂(earn)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.309396</td>
<td>0.274997</td>
<td>0.293129</td>
<td></td>
</tr>
<tr>
<td>(0.0000)**</td>
<td>(0.0000)**</td>
<td>(0.0000)**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>β₃(depr)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-5.05899</td>
<td>0.175833</td>
<td>0.018928</td>
<td></td>
</tr>
<tr>
<td>(0.0000)**</td>
<td>(0.0000)**</td>
<td>(0.0000)**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>β₄(Δ inv)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.083004</td>
<td>0.133722</td>
<td>0.125951</td>
<td></td>
</tr>
<tr>
<td>(0.0001)**</td>
<td>(0.0000)**</td>
<td>(0.0000)**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>β₅(Δ ar)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-0.059915</td>
<td>-0.082445</td>
<td>-0.020575</td>
<td></td>
</tr>
<tr>
<td>(0.0003)**</td>
<td>(0.0000)**</td>
<td>(0.0000)**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>β₆(Δ ap)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-0.007324</td>
<td>0.0082147</td>
<td>-0.0603835</td>
<td></td>
</tr>
<tr>
<td>(0.0000)**</td>
<td>(0.0000)**</td>
<td>(0.0000)**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>β₇(Δ accr)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.0677027</td>
<td>-0.0677027</td>
<td>-0.0677027</td>
<td></td>
</tr>
<tr>
<td>(0.0000)**</td>
<td>(0.0000)**</td>
<td>(0.0000)**</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>69.1896</td>
<td>277.702</td>
<td>277.702</td>
<td>71.597</td>
<td>62.2289</td>
<td>56.9952</td>
<td></td>
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<tr>
<td>(p-value)</td>
<td>&lt; 0.0001</td>
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<td>&lt; 0.0001</td>
<td>&lt; 0.0001</td>
<td>&lt; 0.0001</td>
<td>&lt; 0.0001</td>
<td></td>
</tr>
<tr>
<td>Adj R²</td>
<td>0.27</td>
<td>0.42</td>
<td>0.42</td>
<td>0.90</td>
<td>0.60</td>
<td>0.40</td>
<td>0.61</td>
</tr>
</tbody>
</table>

*p significant at 10%  ** significant at 5%  *** significant at 1%
Model 1: \( CF_{i,t+1} = \beta_0 + \beta_2 EARN_{i,t} + \mu_{i,t} \)

Model 2: \( CF_{i,t+1} = \beta_0 + \beta_1 CF_{i,t} + \mu_{i,t} \)

Model 3: \( CF_{i,t+1} = \beta_0 + \beta_1 CF_{i,t} + \beta_2 ACCR_{i,t} + \mu_{i,t} \)

Model 4: \( CF_{i,t+1} = \beta_0 + \beta_1 CF_{i,t} + \beta_2 \Delta AR_{i,t} + \beta_3 \Delta INV_{i,t} + \beta_6 \Delta AP_{i,t} + \beta_3 DEPR_{i,t} + \mu_{i,t} \)

Model 5: \( CF_{i,t+1} = \beta_0 + \beta_2 EARN_{i,t} + \beta_5 \Delta AR_{i,t} + \beta_3 \Delta INV_{i,t} + \beta_6 \Delta AP_{i,t} + \mu_{i,t} \)

Model 6: \( CF_{i,t+1} = \beta_0 + \beta_2 EARN_{i,t} + \beta_3 DEPR_{i,t} + \mu_{i,t} \)

Model 7: \( CF_{i,t+1} = \beta_0 + \beta_2 EARN_{i,t} + \beta_5 \Delta AR_{i,t} + \beta_3 \Delta INV_{i,t} + \beta_6 \Delta AP_{i,t} + \beta_3 DEPR_{i,t} + \mu_{i,t} \)

### Table 4

<table>
<thead>
<tr>
<th>Model comparison</th>
<th>F-statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1 vs. 5</td>
<td>52.4216***</td>
</tr>
<tr>
<td>Model 1 vs. 6</td>
<td>39.1427***</td>
</tr>
<tr>
<td>Model 1 vs. 7</td>
<td>39.1283***</td>
</tr>
<tr>
<td>Model 2 vs. 3</td>
<td>0.362177</td>
</tr>
<tr>
<td>Model 2 vs. 4</td>
<td>25.7573***</td>
</tr>
</tbody>
</table>

Results of Model 1 and Model 2 show that both variables possess the explanatory power to forecast upcoming years’ cash flow. According to the results, both variables are correlated positively to future cash flow and are statistically significant. However, in terms of explanatory power of the model, it enhances when cash flow of the current period is used rather than earnings of the current period are used. So, this result provides answer to the first research question that future cash flows prediction is improved by using current cash flow rather than by current earnings.
Adding accrued accounts to cash flows in the model does not bring any change in the explanatory power compared to model 2; however a significant increase is evident when accrued accounts are disaggregated into its parts in model 4. These results positively answers the second research question that disaggregating earnings into its parts gives better results rather than aggregate earnings are used to predict future cash flow.

Model 5, 6 and 7 reveal mixed results in the forecasting of future cash flow as segregated parts of accrued accounts are being added to the earnings after taxes. The result weakly answers the third research question. This result is contradictory to Al-Attar and Hussain (2004) who reported that addition of long term accrued accounts show improved predictability than addition of short term accrued accounts. Model 7 shows a slight increase when both accrued accounts i.e. short and long term are added to the current earnings after tax variable. However, the coefficient of earnings after taxes in this research is found to be positive best being significant as well for all the three models. All the models show that prediction power of current earnings increases when accrued accounts data is inculcated into it. The statistically significant F-test proves the same findings with the only exception of the insignificant result for model 2 vs. model 3 wherein the inclusion of accrued accounts does not improve the predictive ability of the model.

Conclusions

In this research future cash flows prediction is being tested by various variables i.e. current earnings, accrued accounts, operating cash flows in order to determine which variable possesses higher prediction ability which is done by different measures of analysis. The models have been developed with respect to the research model
of Barth et al. (2001) and further modified by Al-Attar and Hussain (2004).

From the findings we can conclude that current earnings do not reveal better prediction power when compared to the prediction of current operating cash flow. The findings support the result of model specified by Barth et al. (2001), that improved predictability is resulted if cash flows and aggregate accrued accounts are used as an independent variable rather than current earnings. In addition, further disaggregation of accrued accounts gives higher explanatory power than using aggregate accrued accounts.

Also, the results reveal improvement in the predictive ability when both accrued accounts either short-term or long-term are summed to the current earnings, in distinction to current earnings after taxes when used alone. The findings contradict Al-Attar and Hussain (2004) that long term accrued accounts provide greater increase in the explanatory power than short term accrued accounts being added to the current earnings. It also contradicts the findings of Akbar, Shah and Stark (2011) who find earnings to be non-relevant for small sized firms in UK. Therefore, a cash flow statement provides useful content of information carrying potential of predicting the future cash flows of small sized firms in Pakistan, thereby improving the information content of financial statements.

**Recommendations for Future Research**

Further research in this area is required since accounting research in general, and value relevance as well as the ability of prediction of earnings and cash flows in particular is limited in Pakistan. New avenues related to further variables, sub samples of industries, profit vs loss making firms as well as comparisons between different sizes of firms could be taken up. Moreover, the impact of lagged earnings and cash flows for long term predictability could be tested.
References


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